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**Low Density Resorcinol-Formaldehyde Aerogel Foam Shells for Use as Cryogenic ICF Experiments\*,**

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Low density foam shells based on a resorcinol-formaldehyde chemistry have been developed for use in cryogenic ICF experiments. The shells can be made with diameters up to several millimeters, with wall thicknesses up to several hundred microns, and at foam densities as low as 60 mg/cc. The foam shells are very transparent due to the very small cell size typical for resorcinol-formaldehyde aerogel materials, and this transparency will allow for optical characterization of cryogenic fuel fills. We will report on the methods used to produce these shells with special attention paid to the role of solvent character and our manipulation of the rate of gelation. We will also discuss our work on developing methods for applying a full density polymer overcoat to the low density foam shells.

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